17: Readmission to hospital for long term psychiatric patients after discharge to the community

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Abstract

***Objective*—To identify risk factors which increase the likelihood of readmission for long stay psychiatric patients after discharge from hospital.**

***Design*—Follow up for five years of all long stay patients discharged from two large psychiatric hospitals to compare patients readmitted and not readmitted.**

***Setting*—Friern and Claybury Hospitals in north London and their surrounding catchment areas. Most patients were discharged to staffed or unstaffed group homes.**

***Subjects*—357 psychiatric patients who had been in hospital for over one year, of whom 118 were "new" long stay and 239 "old" long stay patients.**

***Main outcome measures*—Readmission to hospital and length of subsequent stay.**

***Results*—Of all discharged patients 97 (27%) were readmitted at some time during the follow up period, 57 (16%) in the first year after discharge, and 31 (9%) then remained in hospital for over a year. The best explanatory factors for readmission were: male sex, younger age group, high number of previous admissions, higher levels of symptomatic and social behavioural disturbance, a diagnosis of manic-depressive psychosis, and living in a non-staffed group home.**

***Conclusions*—During the closure of psychiatric hospitals, facilities need to be preserved for acute relapses among long term, and especially younger, discharged patients. Staffed group homes may help prevent relapse and reduce the number of admission beds required.**

Introduction

The number of beds in psychiatric hospitals in England and Wales continues to fall.[1] Since 1985 the Team for the Assessment of Psychiatric Services (TAPS) has conducted a follow up study of over 1000 patients discharged from Friern and Claybury Hospitals.[2] One important outcome measure for this policy of deinstitutionalisation is the rate of readmission to hospital.[3-5] Such rates will have important implications. Firstly, they will determine the number of psychiatric places that need to be maintained during and after a hospital closure programme to provide for patients in relapse. Secondly, readmission data about failed placements will suggest how many patients cannot be satisfactorily accommodated in the community given present facilities and will therefore show one limitation of community care. Along with the accompanying paper, which describes those patients who were readmitted and not subsequently discharged again (p 993),[6] this paper identifies risk factors which increase the likelihood of readmission for patients after discharge.

Method

Details of the general design and research methods used in the TAPS study are described elsewhere.[2] Briefly, we used a prospective matched design to compare outcomes for patients discharged from Friern and Claybury Hospitals with patients remaining in hospital during the study period. The matching variables were: age, sex, hospital, total time in hospital, total number of social behaviour problems,[7] and case note diagnosis (categorised as psychotic illness, neurotic illness and personality disorder, and organic illness).

All long stay patients discharged in 1985-90 were identified and traced in 1991. Long stay patients were those whose admission before discharge had lasted one year or more. This group therefore included both "new" long stay patients, whose length of admission was one to five years, and the remainder, described as "old" long stay patients. We established the total number of readmissions, including admissions to hospitals other than Friern and Claybury, along with the reasons for admission, dates of discharge, and details of where patients had been discharged to.

Those discharged patients who were and who were not readmitted were compared for their baseline (predischarge interview) sociodemographic, clinical, and behavioural characteristics. The readmission data were further analysed using multiple linear logistic regression models with the generalised linear interactive modelling (GLIM) statistical program to assess the simultaneous effect of important baseline variables on the risk of readmission. The most parsimonious logistic regression model was used to generate relative odds ratios and 95% confidence limits for each explanatory factor in turn, while controlling for the others. For all patients readmitted within the follow up period the same 30 variables, as described in the previous paper,[6] were selected a priori on clinical grounds and entered into the model.

Results

The key clinical and social characteristics of the 97 patients readmitted from among the total of 357 who were discharged from Friern and Claybury Hospitals

TABLE I—*Social and clinical characteristics of all patients discharged and those who were readmitted to hospital*

	All patients discharged (n=357)	All patients readmitted (n=97)	Patients readmitted in the first year after discharge (n=57)	Patients readmitted and then staying in hospital more than one year (n=31)
Mean age (95% CI) (n=356)	52·2 (50·6 to 53·8)	47·8 (44·9 to 50·7)	47·9 (43·9 to 51·9)	48·1 (41·7 to 54·4)
% Male	55·7 (50·6 to 60·9)	64·9 (54·6 to 74·4)	64·9 (51·1 to 77·1)	74·2 (55·4 to 88·1)
% From Friern Hospital	56·6 (51·4 to 61·7)	68·0 (57·8 to 77·1)	71·9 (58·5 to 83·0)	77·4 (58·9 to 90·4)
% In staffed group homes (n=355)	52·7 (47·5 to 57·9)	44·8 (34·6 to 55·3)	37·5 (24·9 to 51·4)	40·0 (22·7 to 59·4)
% With diagnosis of mania	5·3 (3·2 to 8·2)	9·3 (4·3 to 16·9)	8·8 (2·9 to 19.3)	0 (0 to 11·2)
Length of current admission (months)*	61·8 (54·1 to 70·5)	43·7 (34·5 to 55·3)	42·4 (30·5 to 58·1)	51·5 (32·4 to 81·3)
Total time spent in hospital (months)*	103·6 (91·8 to 115·7)	86·4 (69·8 to 106·8)	90·8 (69·1 to 120·5)	98·5 (66·4 to 145·9)
No of previous admissions*	3·1 (2·7 to 3·4)	4·3 (3·5 to 5·2)	4·4 (3·4 to 5·6)	3·8 (2·7 to 5·4)
Total symptom score*† (n=350)	9·9 (8·9 to 10·9)	11·4 (9·3 to 14·2)	12·6 (9·5 to 16·6)	11·9 (7·6 to 18·5)
Abnormal behaviour score*† (n=350)	2·4 (2·2 to 2·7)	3·0 (2·5 to 3·6)	3·0 (2·4 to 3·8)	2·8 (2·0 to 3·9)

*Log transformed means. Confidence intervals for means were calculated on a natural log scale using a *t* statistic.
†Scores derived from present state examination.

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TABLE II—*Relative odds for readmission within follow up period (for 97 patients readmitted out of 357 discharged)*

Explanatory baseline variable	Unadjusted univariate relative odds (95% CI)	Adjusted relative odds (95% CI) from logistic regression model using 7 explanatory variables including present state examination	Adjusted relative odds (95% CI) from logistic regression model using 7 explanatory variables including present state examination behavioural disturbance score
Sex			
Female			
Male	1·72 (1·05 to 2·82)	1·95 (1·14 to 3·37)	1·79 (1·05 to 3·08)
Hospital			
Claybury			
Friern	1·80 (1·10 to 2·97)	1·58 (0·92 to 2·73)	1·63 (0·95 to 2·82)
Setting			
Staffed group homes			
Non-staffed group homes	1·43 (0·89 to 2·31)	1·08 (0·63 to 1·86)	1·16 (0·67 to 1·99)
Diagnosis			
Not manic psychosis			
Manic psychosis	2·66 (1·04 to 6·76)	2·33 (0·85 to 6·38)	2·09 (0·75 to 5·78)
Age			
>53 years			
<54 years	2·55 (1·55 to 4·20)	1·85 (1·07 to 3·20)	1·89 (1·09 to 3·26)
Previous admissions			
0			
1-9	2·11 (0·90 to 4·92)	1·54 (0·63 to 3·76)	1·52 (0·62 to 3·74)
≥10	6·43 (2·42 to 17·10)	4·87 (1·71 to 13·85)	4·59 (1·60 to 13·16)
Total symptom score (PSE)			
0-3			
4-29	0·94 (0·49 to 1·81)	0·80 (0·40 to 1·62)	Not applicable
≥30	2·08 (0·88 to 4·88)	1·73 (0·69 to 4·36)	
Abnormal behaviour score			
0			
1-7	2·24 (0·96 to 5·20)	Not applicable	2·01 (0·84 to 4·83)
≥8	5·00 (1·57 to 15·90)		4·64 (1·36 to 15·84)

are summarised in table I. The most striking findings were that men, patients from non-staffed group homes, those discharged from Friern Hospital, and patients with a diagnosis of manic-depressive psychosis were significantly more likely to be readmitted to hospital.

The results of the linear regression analysis for all readmissions are presented in table II. They show that seven baseline variable characteristics most increased the risk of readmission: age, sex, hospital, number of previous admissions, diagnosis, total psychiatric symptoms score from the present state examination,[8] and the type of community setting. The most powerful overall explanatory variable from the baseline data was the number of previous admissions; when this was nine or more a patient's risk of further admission was increased sixfold. The next strongest indicator was the number of observable social behaviour problems, which was notably more associated with readmission than the level of symptomatic disturbance. There were also several second order effects or interactions between variables: higher risks for readmission occurred with the following combined characteristics: patients from Friern (but not Claybury) Hospital living in staffed group homes, men (but not women) with a higher number of previous admissions, and men (but not women) with higher levels of behavioural disturbance at initial interview.

Discussion

The overall rates of readmission found in this study compare favourably with those previously reported for discharged long term patients. A 10 year follow up in Massachussetts found that 49% of such patients were readmitted,[9] a finding in keeping with other reports which gave readmission rates varying from 55% in Chicago to 23% in York.[10-13] In this context our figure of 27% for discharged patients readmitted at some time indicates that the pattern of services was keeping the readmission rate fairly low.

Previous studies, although often methodologically weak,[14] have suggested that several features may influence readmission rates among long term patients. The most consistent finding, replicated here, is that the number of previous admissions is the best explanatory factor for future admissions.[15,16] Indeed, a nationwide study in Israel went further in finding that the frequency of admissions followed a repeating lifelong pattern for many individual patients.[17]

The sociodemographic explanatory variables for higher risk for readmission found here are also entirely consistent with previous work. A national follow up of discharged patients in Denmark found that men were at higher future risk of single and multiple readmissions and of subsequently remaining longer in hospital.[18] Similarly, studies elsewhere have consistently shown that discharged younger patients are more likely to use hospital beds in future.[17,19-21]

Variations in the provision of mental health services also influence readmission rates. At one extreme discharged patients who are homeless have a much higher risk of readmission.[22] Where residential services do exist their range and extent affect readmission rates. In Vancouver, for example, which has an extensive range of aftercare services, readmission rates are lower than in Portland, where provision is less.[23] Similarly, patients seen more frequently in the outpatient department in Mannheim are less likely to require readmission.[24] Patients living closer to psychiatric hospitals have a higher risk of readmission.[25] For individual patients compliance with medication and having a full care plan before discharge help reduce the likelihood of subsequent admissions.[26]

Our data show that a subgroup of discharged patients are at significantly higher risk of readmission than the others and that their characteristics are: younger age, male sex, diagnosis of manic-depressive psychosis, more previous admissions, residence in non-staffed group homes, more psychiatric symptoms, and social behaviour problems. During the closure of psychiatric hospitals, therefore, facilities need to be preserved to cope with acute relapses among long term discharged patients, especially for the younger patients. Staffed group homes may help prevent relapse and reduce the number of admission beds required.

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Elder abuse in Britain

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Abuse of elderly people at home by family members or close relatives is currently attracting attention from social and health care practitioners.[1-3] However, its prevalence remains unknown. In conjunction with the Office of Population Censuses and Surveys omnibus survey team we devised a series of questions, based on American and Canadian techniques for researching elder abuse, asking older people about abuse by family members or close relatives.[4,5] The omnibus survey is a nationally representative sample of about 2000 adults throughout Britain interviewed over two weeks; 500-600 of the adults would be aged 60 or over. Elderly people in institutions and those who were too ill or disabled to participate were not included.

Subjects, methods, and results

Adults aged 60 years and over were asked whether a close family member or relative had recently frightened them by shouting, insulting, or speaking roughly (verbal abuse); pushed, slapped, shoved, or been physically rough with them in any other way (physical abuse); or taken money or property from them without their consent (financial abuse). In addition, all adults who were in regular contact with people of pensionable age were asked whether they had recently found themselves shouting at, insulting, or speaking roughly to them or pushing, slapping, shoving, or being rough with them in any other way.

In the omnibus survey of May 1992, 2130 interviews were obtained from 2681 selected addresses (79%). The table shows the responses of the people who answered questions on elder abuse.

The achieved sample is subject to sampling errors arising from the weighting procedures, and these errors add to the observed variance of the sample. Sampling errors would tend to make the confidence intervals wider, although previous Omnibus surveys have found this effect to be negligible. We estimated the number of abused elderly people in the general population by calculating two standard errors around the sample proportion (using the conventional standard error of a proportion formula) based on the age distribution of people 60 and over in the 1981 census. For adults reporting abuse to an elderly person estimations in the general population were calculated by using the conventional standard error of a proportion of the total sample—that is, 2130 respondents—based on the registrar general's population estimate of people in Britain aged 16 years and over in 1990.

Comment

We used wide behavioural definitions of abuse to determine whether respondents were willing to divulge personal and intimate information and to obtain a broad schema of the prevalence of elder abuse. We realise that some of the behaviour reported was probably not "abusive" in terms of severity and intensity. Nevertheless, the results are the first systematic British evidence of elder abuse in the domestic setting. The survey excluded the most frail and vulnerable elderly people, who are most at risk of abuse.[2] Our findings should therefore not be taken in isolation from other attempts to systematically identify elder abuse. Anecdotal evidence suggests that rates of abuse in elderly people known to social and health care practitioners are higher than rates in the general population.

Analysis of abuse of elderly people and adults reporting abuse to elders by age with estimates for total British population

	No (%) of elderly people abused				No (%) of adults reporting abuse to elderly people						
Type of abuse	60-64 (n=150)	65-74 (n=266)	≥74 (n=173)	95% Confidence interval for British population (×1000)*	16-24 (n=156)	25-44 (n=486)	45-54 (n=233)	55-64 (n=188)	65-74 (n=182)	≥74 (n=110)	95% Confidence interval for British population (×1000)*
Verbal	11 (7)	16 (6)	6 (3)	561 to 1123	10 (6)	48 (10)	26 (11)	29 (15)	7 (4)	6 (5)	2411 to 3305
Physical	5 (3)	4 (2)	1 (1)	94 to 505	7 (4)	4 (1)	1 (0.4)	1 (1)			134 to 402
Financial	5 (3)	2 (1)	2 (1)	94 to 505							

*See results section for derivation.